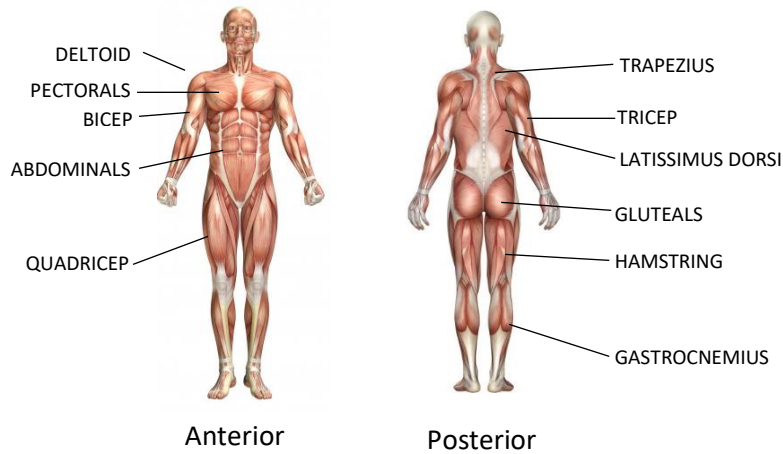




STRUCTURE OF THE MUSCULAR SYSTEM



A

Antagonistic pairs - Muscles are arranged in antagonistic pairs.

As one muscle contracts (shortens) its partner relaxes (lengthens) *i.e. Biceps and Triceps.*

B

When the knee is flexed the **Quadricep** is the **antagonist** muscle and relaxes.



When the knee is flexed the **hamstring** is the **agonist** muscle as it contracts

Types of muscle

A

Voluntary muscles enable movement throughout the body.	Involuntary muscles are essential in maintaining healthy body systems.	Cardiac muscle is vital in sport because it makes the heart pump. Fitness training will strengthen cardiac muscle making the heart more efficient at pumping blood around the body.

The **short term effects** of exercise on the muscles:

1. Working muscles produce heat
2. Increased muscle fatigue due to lactate accumulation
3. Blood is re-distributed to working muscles (Shunting)

When the knee is extended the **Quadriceps** are the **agonist** muscle and contracts.



When the knee is extended the **hamstring** is the **antagonist** muscle and contracts.

Agonist = The muscle that works to create the movement.

Antagonist = the muscle that relaxes to allow the movement to occur.

Fixator = A muscle which acts as the stabilizer and helps the agonist work effectively of one part of the body during movement of another part. The deltoid helps stabilize the bicep during a bicep curl.

Link of the muscular and skeletal system – both systems work together to produce movement. *i.e. a contracting muscle pulls on a bone which changes the angle at a joint.*